EXHIBIT 1

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December 26,
2016

To: David M. Trojanowski
        Marks, O'Neill, O'Brien, Doherty & Kelly, P.C.
        Suite 305
        600 Baltimore Avenue
        Towson, MD 21204

Re: Mills v. PPE Casino Resorts

Preface

This expert report is written in accordance with methodology used by Forensic Consultants rendering opinions within the private security industry. Based on my expertise in the security industry and qualifications to testify (detailed further below and in my CV attached); you have asked me to review the evidence in the case to date and to render a written opinion to address these questions:

1) Did Maryland Casino Live Security operate within the standards of care with respect to Mr. Mills?

2) Did Maryland Casino Live conspire to Anne Arundel Police to violate Mr. Mills Civil Rights?

Facts and Circumstances

On February 21, 2014; Plaintiff Lawrence Mills was an invitee to the Maryland Live Casino in Anne Arundel, Maryland. At approximately 2356 hours, surveillance office was notified by a Floor Supervisor (Jason Yeager) of Lawrence Mills being a known "advantage" player. Such activity is not permitted on the premises.

Hence, Mills status as an "Advantage" player was confirmed in the Casino's system. Thereafter, a Manager and Supervisor approached Mills to escort him to a hallway to receive his identification and receive an "Eviction" notice from the premises.

Surveillance camera video shows Mr. Mills reluctance to follow security personnel to a hallway outside the public's presence. The camera footage also shows security personnel using minimal escort procedures to guide Mr. Mills to the hallway.

It's the escort of Mr. Mills while on the premises that appears to be the subject of the Plaintiff's complaint.

Materials Relied upon

The following is a list of materials relied upon in reaching my opinions.

1. YouTube Video (Re: Escort of Mills from Premises)
2. Plaintiff's Complaint
3. Plaintiff's Responses To Def. Interrogatories
4. Casino Incident Full Report
5. Casino Eviction Notice for Lawrence Mills
6. Maryland Live Casino Standard Operating Procedures
7. Maryland Live Casino Responsible Gaming Plan
8. Phone recording Transcript (Mills Mobile Phone)
9. ASIS International Physical Security Guidelines
10. ASIS Protection of Assets Manual on Physical Security
11. The FBI Bureau of Investigation Bulletin: Policing the Gaming Environment – Kenneth Peak, Phd

<u>Duty of Care</u>

On February 21, 2014; Plaintiff Lawrence Mills was an invitee to the Maryland Live Casino in Anne Arundel, Maryland. As an invitee within the standards of care in the security industry; Mr. Mills was owed a duty of reasonable from foreseeable risks of harms and as an invitee; that duty is subject to revocation by those who control the premises.

Because the Casino had a system that recorded violators of its policies, staff of Maryland Live was able to determine that Mr. Mills could be evicted from the premises.

Upon an eviction by security staff; to comply with the standards of care within the security industry, it must be done with reasonable care under the circumstances.

In this matter, it's clear from review of video footage that the only contact upon Mr.

Mills was Security tucking their hand under Mr. Mill's arms and guiding him to the hallway which minimizes public exposure.

Hence, this escort was reasonable and within the standards of care for the security industry involving the immediate environment.

Further, at all times; Staff and personnel of Maryland Casino Live acted in accordance with its internal policies and the law, and did not breach its duty of care to Mr. Mills as all such activities comports with security industry standards, guidelines, customs and practices.

No Assault by Maryland Casino Live Staff upon Mr. Mills

There are no facts in this case to support that Security in this matter inflicted offensive contact upon Mr. Mills at any time.

In the security industry, the purpose of placing one's hand under the armpit as done to Mr. Mills, is to guide the person to a particular area. The video footage confirms this activity. Opposed to the allegations by the Plaintiff, the video footage does not indicate Mr. Mills arm being violently and/or physically thrust behind his back.

In the security industry, the arm-pit guide is used as it assists someone like Mr. Mill where to go; especially when he is resisting as he admitted too in this matter. Also, from a public standpoint, other patrons do not know if such a person is being assisted because of medical purposes or inebriation which is common for this environment.

Accordingly, the slight contact made to Mr. Mills by security staff was reasonable under the circumstances and was not done in a manner to offend Mr. Mill's sense of dignity.

No False arrest or False Imprisonment by Maryland Casino Live Staff upon Mr. Mills

Foremost, there are no facts in this matter to support that Maryland Casino Live Staff executed an arrest or false imprisonment upon Mr. Mills.

At all times, security staff acted reasonably by trying to evict Mr. Mills from the premises expeditiously. The video footage in this matter supports this. It was Mr. Mills who refuse to leave the floor and the premises.

Staff acted in accordance with their policies and procedures to obtain information from Mr. Mills to complete the eviction notice. There are no facts to support that security detained Mr. Mills and bounded him to a particular area for an unreasonable amount of time; nor did inform him at any time her wasn't free to leave.

Accordingly, the escort from the floor to the hallway was done in a very reasonable time period and at no time did staff use handcuffs, a bounded areas, or physical restraints to keep Mr. Mills on the premises. Again, the staff simply attempted to get Mr. Mills Identification for the sole purpose of the eviction and nothing else.

Moreover, there are facts to support that Mr. Mills remained on the premises and in the presence of security to build a civil case against the Casino.

As part of my review in this matter, I reviewed audio transcribed from Mr. Mills telephone as Mr. Mills covertly taped Security's attempt to obtain Mr. Mills identification. Also, from the initial moment security requested Mr. Mills to follow them to a non-public area, Mr. Mills made several statements to making a case against the casino independent of any real claims inflicted by Casino staff.

No False Light by Maryland Casino Live Staff upon Mr. Mills

As mentioned above, at all times Security staff conduct was reasonable and within the standards of care in making sure that Mr. Mills eviction was not opened to public exposure within the Casino.

The facts are clear as the video footage security approached Mr. Mills and attempted to expeditiously escort him to an area outside the public's view for further action of obtaining information for the eviction form. Security did not yell, shout, or engage in a physical confrontation to achieve its purposes under their policies.

Further, the procedure to move a patron to a hallway or backroom is a reasonable security measure to prevent any public scrutiny of a patron.

No Negligent Hiring and Retention of Security Staff

The claim that any Maryland Casino Live Security Staff was negligently hired or retained is without merit.

Foremost, the Casino has a very detailed policy and procedures manual. There standards of operating procedures is reasonable according to the standards in the security industry. In addition to other measures, the manual is very detailed especially how to evict a patron upon its premises.

Moreover, there are no facts to support that the security staff activities on February21, 2014 falls below any hiring or training standard within the security industry.

No Violation of Mr. Mills Civil Rights or Conspiracy with the Police

Mr. Mills Complaint alleges a conspiracy with the Police and Security Staff to violate the civil rights with Mr. Mills.

The facts are clear the Security Staff of Maryland Casino Live in no way train, agree upon, or work together in their prospective employment role. Also, there are no facts to support that Security staff serves as an arm of the Maryland Government or Anne Arundel Police.

Accordingly, Maryland Casino Live Standard Operating Procedures is clear as it identifies is requirement to have police officers respond and address violations of Maryland Law.

Hence, Maryland Casino Live request from assistance from the Anne Arundel police is a reasonable security measure recognized and implemented by the private security industry and does not assume any agreement by Security Staff and Police to violate the rights of any citizen using the Casino.

Opinions

Based on my review of the materials in this case and consideration of best practices in the industry, I have formed opinions. I reserve the right to alter such opinions should additional information become available prior to the time of trial. I hold these opinions to a reasonable degree of certainty within the field of private security:

It is my opinion that Defendants Maryland Casino Live and its employees:

1)   Did not breach any standards of care owed to the Plaintiff.

2)   At all times used reasonable to evict Mr. Mills from its premises.

3)   At all times respected the civil rights of Mr. Mills.

4)   Did not conspire with Anne Arundel Police to violate any civil rights of Mr. Mills.

The basis and reasons for my opinion(s) are premised upon my education, training, experience, and knowledge of the security industry customs, practices, standards, analysis and study in the field, through consulting professional literature, through seminars, and the facts of the case presented and materials reviewed. Specifically, my experienced includes Board certification in Security Management, retired from the U.S. Secret Service after 20 years of service, Professor of Security Management, published author in the Security Industry, Former Chairman of the ASIS Crime and Loss Prevention Council, Certified Facility Security Officer,

Certified law Enforcement Trainer, and a security professional who has conducted over 100 surveys of premises and established security plans for various premises and environments.

I proffer these opinions based upon the experience, education, and training above, and reserve the right to modify such opinions if additional information is provided.

Sincerely,

Michael A. Hodge, CPP, JD

Investigation Report

Mills vs. Maryland Live

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Page Count	:	35
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1   Background to the case

On February 21, 2014, Lawrence Mills (the Plaintiff), was a guest at the Maryland Live Casino in Anne Arundel County, Maryland. During his visit, he was accused of counting cards. At some point in time the plaintiff began recording the conversation with an iPhone in his pocket.

Datigent, LLC was retained by David Trojanowski of Marks, O'Neill, O'Brien, Doherty & Kelly, P.C. on January 25, 2017 and, at the attorneys direction, examined an audio recording that the plaintiff created using his Apple iPhone while talking to the casino security staff in the hallway. A casino surveillance video (no audio) and a YouTube video (with audio) that the plaintiff uploaded to YouTube.com was also examined. The initial examination was to determine whether the audio file provided by the plaintiff named "Ex 7 Full Version (MD121303@xAE860).wav" with SHA1 Hash: e148332b523f6d4bb6e97e6195374a195218d536 contained the same content that was recorded when the incident occurred on February 21, 2014. After examining and comparing all three media files via a detailed timeline analysis, it was determined the main audio file ("Ex 7 Full Version (MD121303@xAE860).wav") in question, likely does not contain the same content that was recorded when the incident occurred.

Also, during the examination of "Ex 7 Full Version (MD121303@xAE860).wav", xml metadata in the Adobe Extensible Metadata Platform (XMP) format was found in the file by looking at its raw contents in a hex editor. The metadata contained several elements, one of them being the "softwareAgent" element. This element contains the software agent (program) name that was responsible for performing the action on the file. The value of the element was "Adobe Premiere Pro CC 2015 (Macintosh)." This finding means "Ex 7 Full Version (MD121303@xAE860).wav" was created and/or modified with Adobe Premiere Pro CC 2015 for Macintosh. Another notable element was the "posixProjectPath" element that contained the path of an Abode Premiere Pro CC Project file (.prproj). The project file path appears to reference an external hard drive with a volume name of "5 TB Drive."

Based on these initial findings, it was determined that the plaintiff's Apple iMac computer (Serial #: D25KK15MDNMP) should be examined in an attempt to identify the original audio recording that was created when the incident occurred. For photos of the plaintiff's computer (see Appendix A).

This report provides a detailed examination of the audio recording the plaintiff allegedly made while in the casino hallway, a casino surveillance video, a video (with audio) that the plaintiff uploaded to YouTube.com, and the plaintiff's Apple iMac computer.

2   Tools Used

Forensic tools and programs used during this examination include:

- X-Ways Forensics (X-Ways): version 19.1
- MacQuisition: Release 2016 R1
- HxD – hexeditor: version 1.7.7.0
- Notepad++: version 7.3.3
- DCode: version 4.02a
- AccessData FTK Imager: version 3.3.0.5
- Registry Ripper (RegRipper): version 2.8
- Sleuth Kit (fsstat): version 4.1.3
- Apple iTunes (Windows): version 12.6.0.100
- VMware Workstation Pro: version 12

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3   Examination of Apple iMac

On March 17, 2017, Datigent, LLC received the plaintiff's computer (an Apple iMac, Serial #: D25KK15MDNMP) to examine. The investigation started with forensically imaging the Apple iMac using MacQuisition. MacQuisition successfully imaged the computer and created an acquisition MD5 Hash: B6DF588680D0D57D8B1CE929B0034A12. The acquisition hash and other detailed information regarding the acquisition can be found in Appendix B.

Two additional forensic copies were made and the acquisition image along with a second back-up forensic copy were put in storage and locked. The third forensic image aka the "Working Copy" is the forensic copy that all analysis was performed on.

Note #1: During the initial acquisition of the iMac, the system started to boot into the operating system (OS), so a hard power down had to be performed to prevent the system from fully booting into the operating system. It is believed the system did not recognize the keyboard, so another keyboard had to be used. There was no keyboard supplied with the iMac computer. During the second attempt to boot the system with MacQuisition, the system booted into the startup manager which allowed a proper acquisition to take place using MacQuisition.

Note #2: The original acquisition image name was "Miller-2017-03-21.E01." The image "Miller-2017-03-21.E01" was renamed to "Mills-2017-03-21.E01." This is because there was a typo while preparing to image the iMac computer. Renaming the image file does not affect the acquisition MD5 hash. I recalculated the MD5 Hash with X-Ways (see Figure 1) and the recalculated MD5 hash (B6DF588680D0D57D8B1CE929B0034A12) is the same as the acquisition MD5 hash (B6DF588680D0D57D8B1CE929B0034A12).

Hash[1] MD5	B6DF588680D0D57D8B1CE929B0034A12	Verify hash
Hash[2] SHA-1	9DC1093BB15FFB9E23F098D0EC23A9688EFA5D35	Verify hash

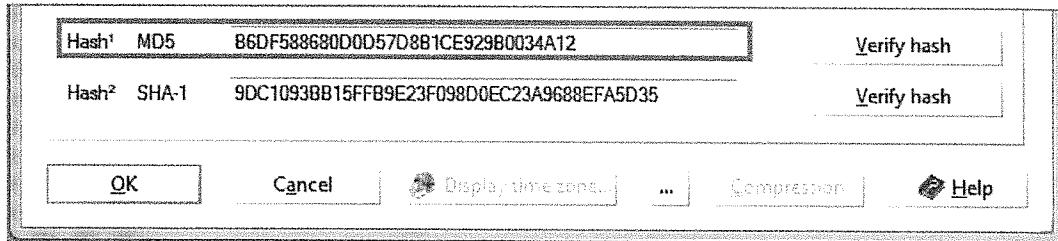| OK	Cancel	Display time zone...	...	Compression	Help

Figure 1. X-Ways hash verification

While other tools were used in the investigation, most of the analysis was performed using X-Ways. Audio and video files, as well as other files of interest were extracted from the disk image for secondary analysis using other tools. X-Ways was also used to run grep (a Unix command used to search files for the occurrence of a string of characters that matches a specified patter) and live searches.

Investigative techniques used included, but were not limited to, date and time stamp analysis; filtering for specific file types, profile reviews, owner reviews, keyword searches, extensive log review and analysis; file signature based carving; hash analysis; compound file mounting; and exporting and examining virtual machines identified on the iMac.

During this examination, only audio and video files were of interest. Three copies of the same audio file (see Figure 2) that was provided for examination was identified on the plaintiff's Apple iMac. These files have the same SHA1 hash (bc4a0561a2ca5578f2ef5b5559480b817af1ac3a). The filenames are as follows:

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- Original Audio.wav, SHA1 Hash: bc4a0561a2ca5578f2ef5b5559480b817aflac3a
- Full Version.wav, SHA1 Hash: bc4a0561a2ca5578f2ef5b5559480b817aflac3a
- Full Version.wav, SHA1 Hash: bc4a0561a2ca5578f2ef5b5559480b817aflac3a

Name	Description	Type	Size	Created	Created	Modified	Record changed
Original Audio.wav	existing, tagged, already viewed	wav	146 MB	11/08/2016 15:04:56 -5	11/17/2016 16:18:15 -5	11/08/2016 15:05:01 -5	11/08/2016 15:05:02 -5
Full Version.wav	existing, tagged, already viewed	wav	146 MB	11/08/2016 15:04:56 -5	11/17/2016 16:19:22 -5	11/08/2016 15:05:01 -5	11/17/2016 16:18:53 -5
Full Version.wav	existing, tagged, already viewed	wav	146 MB	11/17/2016 16:17:43 -5	11/17/2016 16:20:57 -5	11/17/2016 16:17:43 -5	01/05/2017 18:26:42 -5

Figure 2. Screenshot of audio files

A combination of keyword searches and file filtering was used to help sort and filter out unwanted files. This technique was used in an effort to identify possible files that could be the original audio file. No notable files were identified.

3.1   Mac OS Time Rules

It should be noted that timestamp analysis can play a critical role in an investigation. Most operating systems/filesystems have rules for how and when these timestamps are updated. Below are some general rules for how timestamps are impacted when files are created, modified, copied or moved on an HFS+ filesystem.

3.1.1   File Creation on HFS+

When a new file is created on a HFS+ volume the dates and times are as follows:

- Created – Time of creation
- Modified – Time of creation
- Accessed – Time of creation
- Record Changed – Time of creation
- Added Date – Not populated

3.1.2   Modifying Files on HFS+

When a file is modified (edited) on a HFS+ volume the dates and times are impacted in the following way:

- Created – Unchanged
- Modified – Time of modification
- Accessed – Time of modification
- Record Changed – Time of modification
- Added Date – No change

3.1.3   Moving and Copying Files from HFS+ to HFS+

If a user copies or moves files from one HFS+ volume to another the dates and times are impacted, on the destination, in the following ways:

- Created – Inherited from the original
- Modified – Inherited from the original
- Accessed – Updated to time of copy

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- Record Changed – Updated to time of copy
- Added Date – Updated to time of copy

3.2   Example Explanation of Mac OS Time Rules

The Created, Modified (last modified), and Accessed (last accessed) timestamps are all pretty straight forward. Record Changed is when the file's metadata was changed in the HFS+ Catalog. For example; author, date created, date modified, and file size are examples of a file's metadata.

The Created[2] timestamp field (see Figure 2) is populated in X-Ways for HFS+ file systems, with the relatively new "Added Date" timestamp for Mac OS X. This timestamp represents when a file was copied or moved to its current location. If a file exists on a HFS+ volume and is moved to another folder on that same volume then this metadata value is updated to reflect the date and time of the move.

So, in the case of the first "Full Version.wav" file in the screenshot above (see Figure 2), it was more than likely created in one location (folder) on the plaintiff's iMac on "11/08/2016 15:04:56" and copied or moved to its current location on "11/17/2016 16:19:22."

Since the Apple iPhone uses the HFS+ filesystem, the Created dates and times should have been inherited and retained if the plaintiff copied or moved the audio file from his iPhone to his iMac, since the copy or move would have taken place from one HFS+ volume to another HFS+ volume. There was no audio file found that reflected a creation date and time that corresponded to the date and time of the incident.

3.3   File System Information

The plaintiff's computer uses the HFS+ file system (see Appendix C). It serves as the primary file system for Mac OS. The volume for this file system was created on 2015-04-09 16:49:52 (Eastern Daylight Time). This date and time also correspond to the time the operating system was installed on this computer. The following sleuth kit command was used to display general details about the file system.

Command: fsstat -i ewf Mills-2017-03-21.E01 > Mills-2017-03-21_FileSystemInformation.txt

3.4   Current Time Zone

/etc/localtime
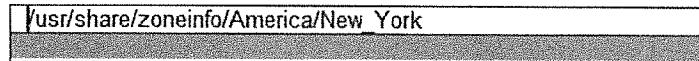
/usr/share/zoneinfo/America/New_York

Figure 3. Current Time Zone

3.5   Operating System (OS) name and version

Plist describing the installed Operating System:

/System/Library/CoreServices/SystemVersion.plist

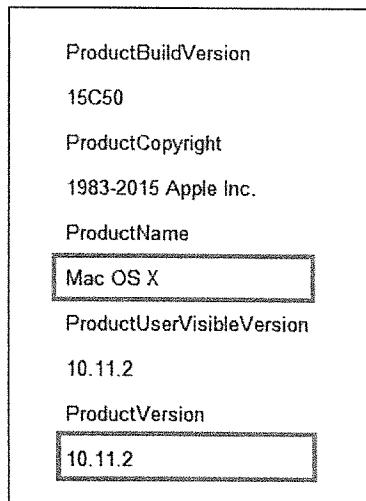PRIVILEGED AND CONFIDENTIAL
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ProductBuildVersion

15C50

ProductCopyright

1983-2015 Apple Inc.

ProductName

Mac OS X

ProductUserVisibleVersion

10.11.2

ProductVersion

10.11.2

Figure 4. Operating System name and version

3.6   User Directories in /Users/*

Name	Description	Type	Size	Created	Created	Modified	Modified	Record changed
JustinMills	existing, tagged (partially)		150 GB	05/31/2015 18:21:41 -4		03/15/2017 14:03:29 -4		03/15/2017 14:03:29 -4
Guest	existing		327 B	05/31/2015 18:22:17 -4		05/31/2015 18:22:18 -4		05/31/2015 18:22:18 -4
Shared	existing		22.5 MB	09/09/2014 16:47:35 -4	04/09/2015 19:13:42 -4	12/16/2016 22:34:45 -5		12/16/2016 22:34:45 -5
.localized	existing, already viewed		0 B	08/22/2015 18:27:44 -4	10/25/2015 03:17:44 -4	08/22/2015 18:27:44 -4		10/25/2015 03:17:44 -4

Figure 5. User accounts on system

3.7   Attached iDevices

/Users/JustinMills/Library/Preferences/com.apple.iPod.plist

The file referenced above contains a list of Apple devices that were attached to the computer at some point. iTunes (for Windows) plutil.exe was used to parse and convert this binary file "com.apple.iPod.plist" to xml. The program plutil.exe is native to Mac OS X (as of 10.2), however it is also included with iTunes for Windows. The below command was used to perform the conversion:

Command: plutil -convert xml1 com.apple.iPod.plist

The XML output from running this command can be found in Appendix D. Three Apple devices were identified as being attached to the plaintiff's iMac. The Check Your Service and Support Coverage lookup feature on Apple's web site was used to look up each serial number to determine what types of devices were attached to the plaintiff's iMac. The results of looking up the three devices are listed below:

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Detailed information on attached iDevices:

Device #1: iPhone 5c
Device #1 Serial Number: FFMN248CG07J
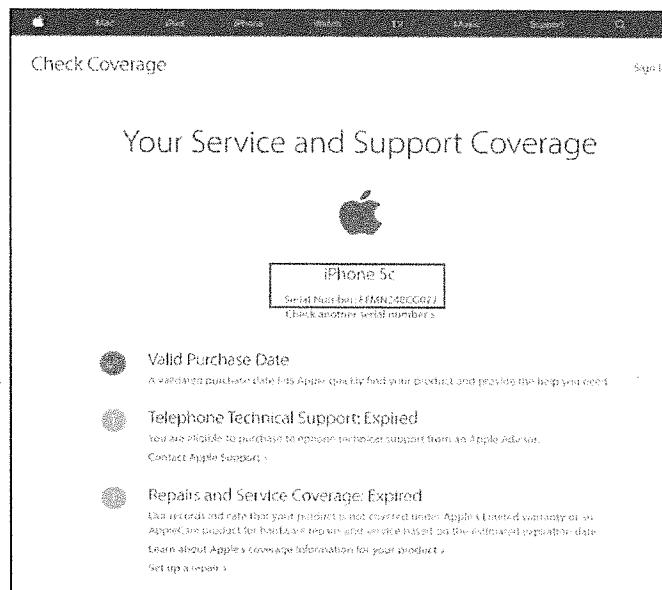**Device #1 Connected:** 2016-02-19T03:17:57Z

Figure 6. Attached device #1

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Device #2: iPhone 5
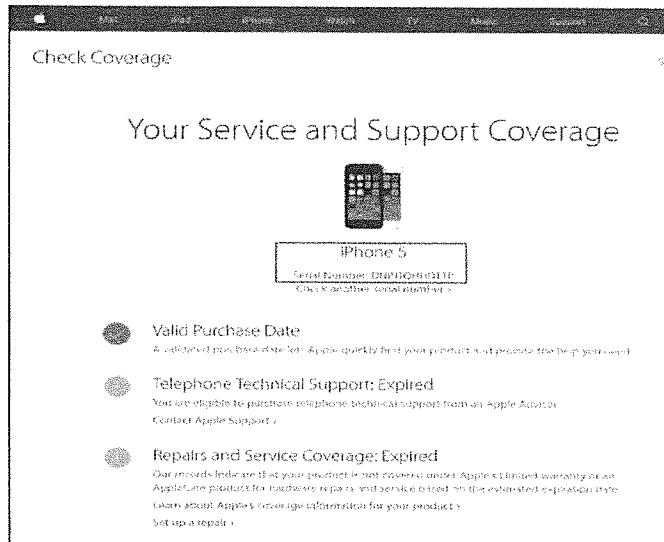**Device #2 Serial Number:** DNPJTQHHDTTP
Device #2 Connected: 2016-02-27T16:39:48Z

Figure 7. Attached device #2

Device #3: iPhone 6
Device #3 Serial Number: DNTPXR1GG5MP
Device #3 Connected: 2017-03-13T07:24:01Z
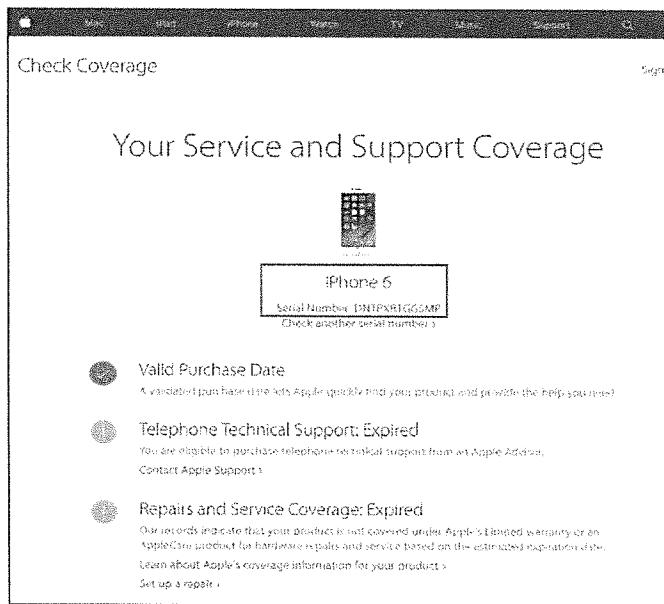
Figure 8. Attached device #3

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3.8   iOS Device Backups Directory

/Users/JustinMills/Library/Application Support/MobileSync/Backup/*

There were no backups of any iOS device on this iMac

3.9   Recent Items

/Users/JustinMills/Library/Preferences/com.apple.recentitems.plist

There were no recently opened application, file, and servers in the list

3.10   User Trash Folder

/Users/JustinMills/.Trash/

There was nothing notable identified in the trash folder

3.11   System log (/private/var/log/daily.out)

The daily.out log file (see Appendix E) is generated by the daily periodic job "maintenance script" that run overnight (if your machine is up and running, but not necessarily logged in). The daily script deletes some temporary files and records various statistics amongst other things. This partial log shows mounted devices with volume names that were connected to the system when the daily script ran.

Because the script runs daily, this logs shows a history of statistics on the disks that are connected to the iMac. The devices that are highlighted in red are devices that could be of interest, in particular the device with volume name "5 TB Drive." This log shows a device with volume name "5 TB Drive" was most recently connected to the system on "Thu Jan 5 08:13:01 EST 2017" and was connected to the iMac multiple times as far back as "Mon Dec 7 02:10:01 EST 2015." This device (5 TB Drive), is the device that is referenced in the xml metadata (see Appendix H) from file "Ex 7 Full Version (MD121303@xAE860).wav."

Other devices that could be of interest are the devices with volume names "VIDEO," and "MILLS CASE."

3.12   Keyword searches

The keyword searches that was performed were mainly based on information that was identified in the xml metadata of the audio file "Ex 7 Full Version (MD121303@xAE860).wav." The search results are categorized below according to the number of hits. Screenshots of the results can be found in Appendix F.

3.12.1   Search hits 1 – 200

- USBMSC

3.12.2   Search hits above 1000

- 5 TB Drive

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4 Examination of Audio & Video files

This investigation began with an examination of an audio recording that the plaintiff allegedly created using his Apple iPhone while talking to the casino security staff in the hallway of the Maryland Live Casino on February 21, 2014. A casino surveillance video (no audio) and a YouTube video (with audio) that the plaintiff uploaded to YouTube.com were also examined.

A detailed timeline analysis (see Appendix G) was performed on these audio and video files that allowed a side-by-side comparison, enabling this investigation to conclude the audio file submitted by the plaintiff did not contain the same content that was recorded the day the incident occurred.

4.1 Embedded XML metadata (Adobe XMP)

During the initial examination of "Ex 7 Full Version (MD121303@xAE860).wav" it was determined the file was created and/or modified with Adobe Premiere Pro CC 2015 (Macintosh). When examining this file, Adobe Extensible Metadata Platform (XMP) xml metadata was located at the end of the file and extracted. The below image (see Figure 9) is a partial screenshot of the embedded xml metadata (see Appendix H) located at the end of "Ex 7 Full Version (MD121303@xAE860).wav."

Figure 9. Embedded XML metadata in "Ex 7 Full Version (MD121303@xAE860).wav"

4.2 Adobe's Extensible Metadata Platform (XMP)

Adobe's Extensible Metadata Platform (XMP) is a file labelling technology that lets you embed metadata into files themselves during the content creation process. With an XMP enabled application, your workgroup can capture meaningful information about a project (such as titles and descriptions, searchable keywords, and up-to-date author and copyright

information) in a format that is easily understood by your team as well as by software applications, hardware devices, and even file formats. Best of all, as team members modify files and assets, they can edit and update the metadata in real time during the workflow.

4.3   Extracted XML metadata

The xml metadata that was extracted from "Ex 7 Full Version (MD121303@xAE860).wav" contained references to "MD Live – False Imprisonment.mov" and "Audio Full – Patron Assaulted & Detained at MD Live.wav" files.

The "MD Live – False Imprisonment.mov" file was available on the plaintiff's iMac computer. "MD Live – False Imprisonment.mov" is a casino video (with audio added) from the casino that starts when the two police officers enter the hallway where the plaintiff and the casino security personnel are waiting. The second file "Audio Full – Patron Assaulted & Detained at MD Live.wav" was not available to be further examined.

The xml metadata also had a reference to: "/Volumes/5 TB Drive/MD Live/MD Live Videos/Videos.prproj." Based on the examination of the plaintiff's Apple iMac, "/Volumes/5 TB Drive" is an external drive that could contain files that are associated with the creation or modification of the "Ex 7 Full Version (MD121303@xAE860).wav" file. This drive could also contain the unedited version of the audio file that the plaintiff created with his Apple iPhone.

Based on the examination of the audio and video files, the audio file "Ex 7 Full Version (MD121303@xAE860).wav" appears to be missing some audio. There seems to be periods of talking not captured on the recording (see Appendix G for details). Also one notable item that is missing from the audio recording is a shuffling noise that should have been heard when the plaintiff started the recording and put his iPhone back into his pants pocket (while the phone was recording). This expected noise is missing from the audio recording.

5   Challenges

In performing this investigation there were several challenges that had to be overcome in an effort to seek the truth and obtain concrete answers. These challenges not only hindered the investigation but they prevented a quick and timely turnaround. Listed below are challenges that were encountered during this investigation:

5.1   Challenge #1: No Source Media

Without the source media (Apple iPhone) to examine, it is not possible to prove "Ex 7 Full Version (MD121303@xAE860).wav" contains the same content that was recorded when the incident occurred.

5.2   Challenge #2: No Access to External Media Device(s)

Without examining the external media device labelled "5 TB Drive" that was referenced in the metadata of "Ex 7 Full Version (MD121303@xAE860).wav," there is no way of knowing if this device contains the original (unedited) version of the audio file that was created when the incident occurred.

5.3 Challenge #3: No Original Audio File to Examine

Without the original version of the audio file, it is impossible to compare or prove what edits were made, or what conversations are missing from the supplied audio file.

5.4 Challenge #4: Plaintiff Confirmed Edits were made

Since the plaintiff stated he made some edits to the supplied audio file, this file is not considered the original version of the audio file. This edited file is essentially a new version of the file. If you were to create and compare the MD5 or SHA1 hashes of these files, they would be different.

6   QuickVoice® Recorder

The iPhone Voice Memos app is a convenient tool for recording audio on the go. Recordings are stored on the iPhone and can be synced with iTunes. Voice memos are saved using the MPEG-4 format. The MPEG-4 codec used to record and play back audio files in the iPhone's Voice Memo app is compressed using the Advanced Audio Coding (AAC) codec or the Apple Lossless Audio Codec (ALAC). Because the Voice Memos app only records audio data, the ".m4a" file extension is used, rather than the ".mp4" file extension. MPEG-4 files with audio and video generally use the standard ".mp4" extension and audio-only MPEG-4 files generally have an ".m4a" extension. It should also be noted that the iPhone Voice Memos app does have the ability to edit recordings.

Plaintiff's counsel recently identified that the plaintiff may have used the QuickVoice Recorder app on his Apple iPhone to create the audio recording. To test how the QuickVoice Recorder app works, I downloaded and installed the app on an Apple iPhone 6. Several sample recordings were made using the app, and each time the recording was stopped, the audio recording was automatically saved. I was never given an opportunity to give the newly created recording a filename. After creating a few samples, I emailed a few of the recordings to myself without providing a name for the newly recorded audio, and the recordings were sent as attachments with the filename "MyRecording.m4a." This testing was performed with QuickVoice Recorder v3.0.2, the most recent version of the app. I also took time to thoroughly go through the app in search of a way to change or save the audio recording as a different file type. Based on my review of the app, I saw no way to export, or otherwise save a recording to another format. General information about the QuickVoice Recorder v3.0.2 can be found in Appendix I.

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

7   Opinions

Based on my review of the materials in this case and consideration of best practices in the industry, I have formed my opinions. I reserve the right to alter such opinions should additional information become available prior to the time of trial. I hold these opinions to a reasonable degree of certainty within the field of digital forensics:

> It is my opinion that the plaintiff, Mr. Lawrence Mills:

1. Did not provide the original version of the audio recording.

2. Did not provide an audio recording that contained the same content that was recorded when the incident occurred.

3. Did not provide all electronic media that was used to store, create or modify the audio recording that was created when the incident occurred.

The basis and reasons for my opinions are premised upon my education, training, experience, and knowledge of digital forensics, filesystem analysis, operating system analysis, file analysis, and study in the field through consulting professional literature, attending seminars, and from the facts of the case presented and the electronic media that was examined. Specifically, my experience includes attaining numerous certifications in digital forensics, receiving extensive training in file and system analysis, serving as an Adjunct Professor of Information Security, publishing an article for PenTest Magazine, and working as a security professional that regularly performs file forensics and examines computer artifacts that are a part of digital forensics investigations.

I proffer these opinions based upon the experiences, education, and training above, and reserve the right to modify such opinions if additional information is provided.

Sincerely,
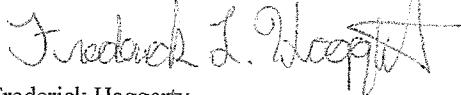
Frederick Haggerty

8   Compensation

I bill at a rate of $250.00 per hour for my time for case review and analysis, development of opinions, depositions and trial. For depositions and trial, I charge a three hour minimum payable in advance. The hourly rate is portal to portal for travel is incurred and all expenses for that travel, including mileage billed at $.60 per mile, is charged.

9   Expert Testimony

I am a Digital Forensics Expert with over 18 years of experience, skills, and training. To date, I have not testified in a deposition or trial.

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE
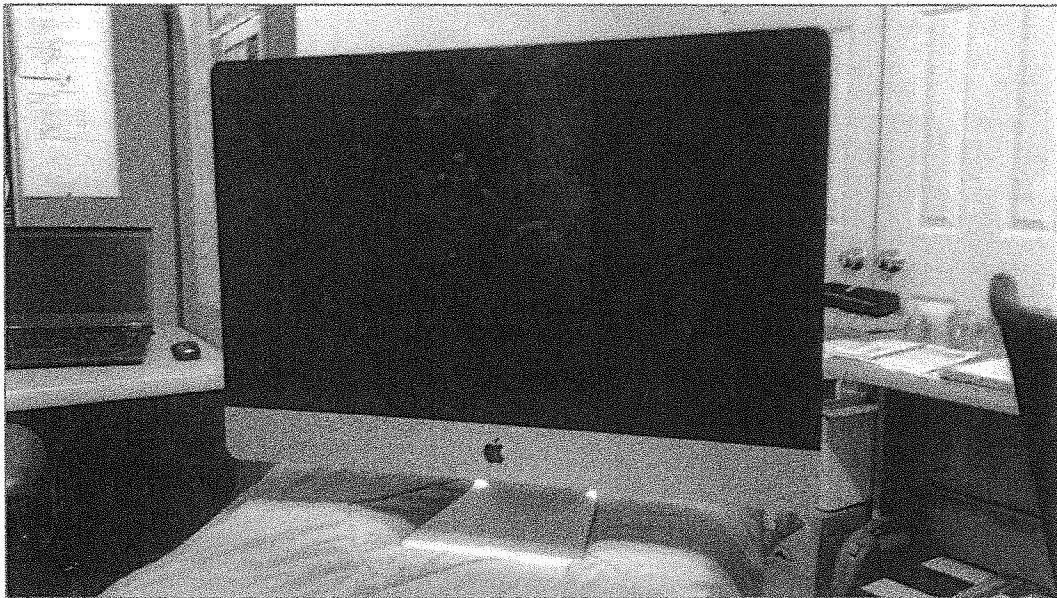
Appendix A.   Apple iMac Photos: Serial #: D25KK15MDNMP

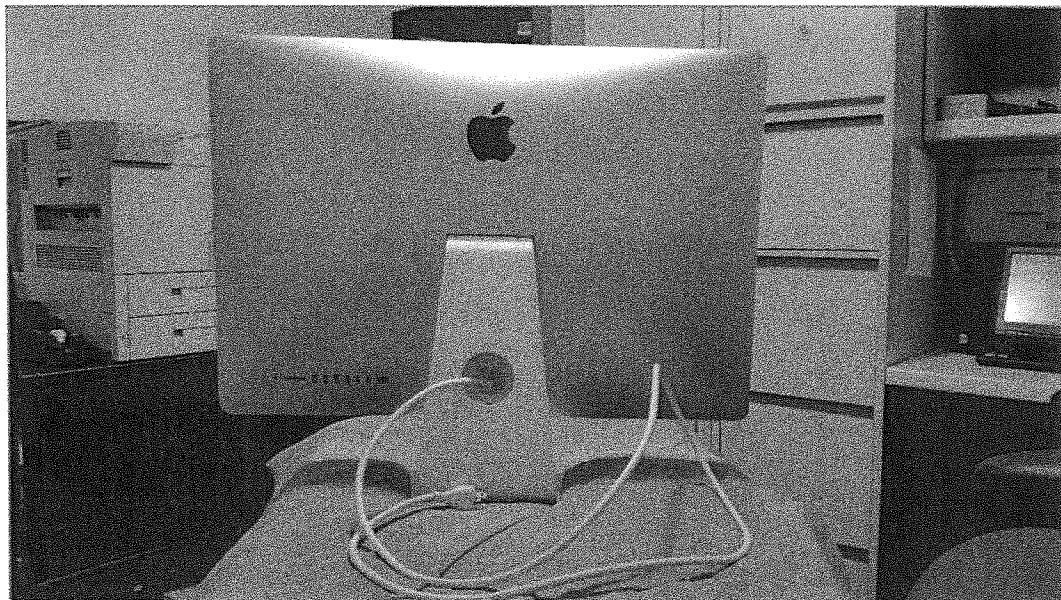Figure 10. Front of Plaintiff's Apple iMac (Serial #: D25KK15MDNMP)

Figure 11. Back of Plaintiff's Apple iMac (Serial #: D25KK15MDNMP)

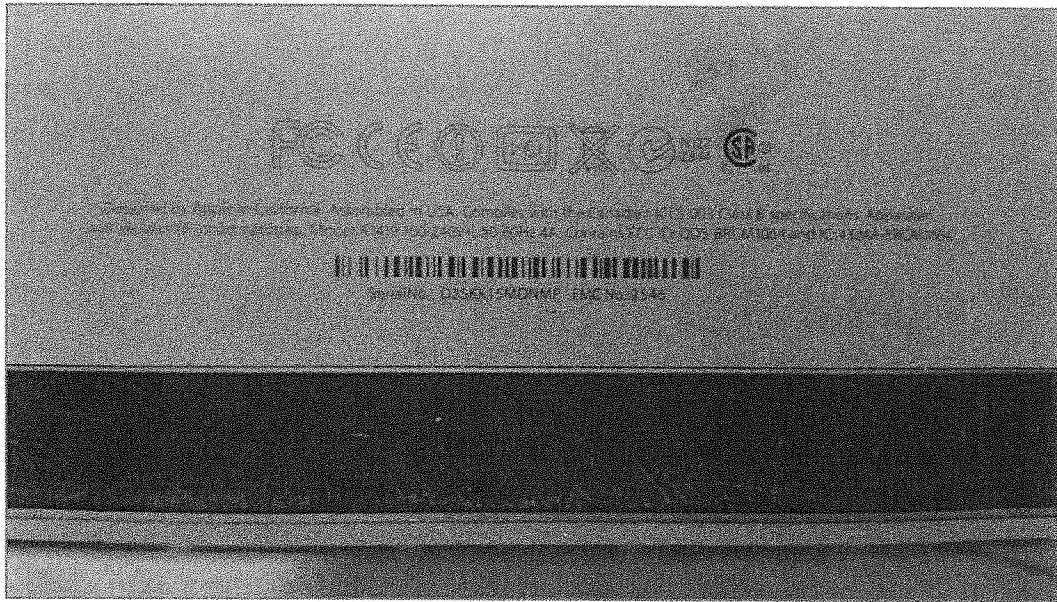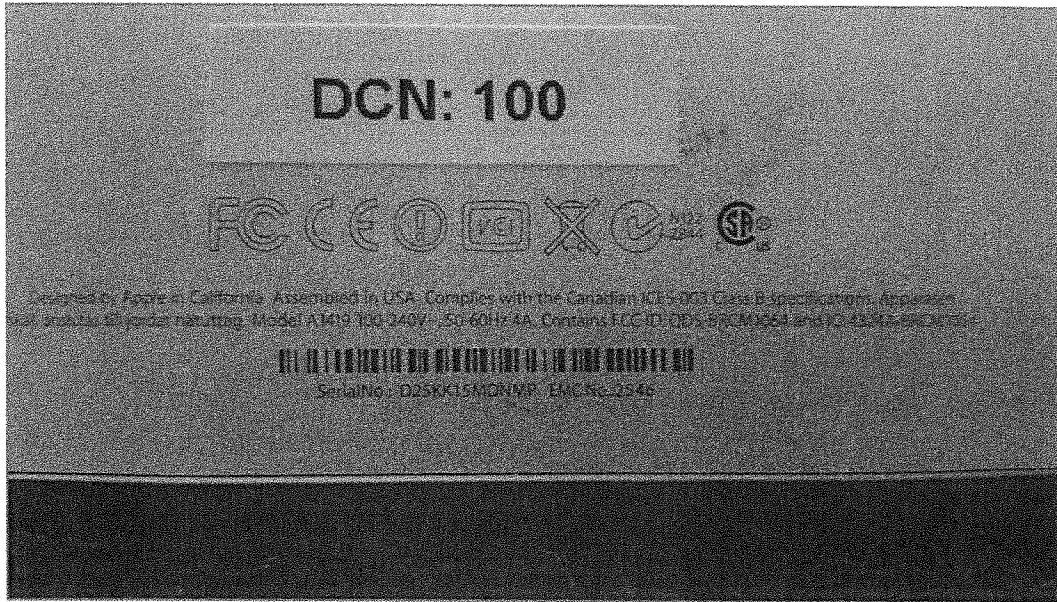Figure 12. Bottom of Plaintiff's Apple iMac (Serial #: D25KK15MDNMP)

Figure 13. Bottom of Plaintiff's Apple iMac with DCN (Serial #: D25KK15MDNMP)

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Appendix B.   Acquisition Log

Acquisition Log Name: Acquisition Log.txt

Note: The red text in this appendix is highlighting the MD5 Acquisition hash that was calculated when the iMac was forensically imaged. Following best practices, a forensic hash is used for identification, verification, and authentication of file data. This acquisition hash serves has a unique identifier for the acquired (collected) data (similar to a DNA sequence or a fingerprint of the data).

```
Case Identification:
------------
Case Name:        Mills vs. Maryland Live
Case Number/ID:
Location:
Exhibit ID/Evidence #:     Apple iMac Computer
Description:       Apple iMac Computer

Examiner Information:
------------
Examiner:         Frederick Haggerty
Agency/Company:           Datigent, LLC
Section/Department:
Comments:
------------
Apple iMac Computer
Serial #: D25KK15MDNMP
Source Device: /dev/rdisk2
Disk Identifier: disk2
Model: Macintosh HD
Capacity: 2.8 TB (3114447142912 Bytes)
Volume UUID: 87133CE9-02BF-3D0A-90A2-94FA12E14518
Bus Protocol: SATA
Bus Protocol: Mac OS Extended
[Core Storage - merged data from disk0s2, disk1s2, disk1s4]
   Disk Identifer: disk0
   Model: APPLE SSD SM128E Media
   Serial Number: S0XDNYAD318398
   Capacity: 113.0 GB (121332826112 Bytes)
   Bus Protocol: SATA
      Device Identifier: disk0s2
      Name: Macintosh HD
      Capacity: 112.6 GB (120988852224 Bytes)
      [Core Storage - disk2 contains merged data]
   Disk Identifer: disk1
   Model: APPLE HDD ST3000DM001 Media
   Serial Number: Z1F5Y9MB
   Capacity: 2.7 TB (3000592982016 Bytes)
   Bus Protocol: SATA
      Device Identifier: disk1s2
      Name: Macintosh HD
      Capacity: 1.9 TB (2198162464768 Bytes)
      [Core Storage - disk2 contains merged data]
   Disk Identifier: disk1
   Model: APPLE HDD ST3000DM001 Media
   Serial Number: Z1F5Y9MB
   Capacity: 2.7 TB (3000592982016 Bytes)
   Bus Protocol: SATA
```

```
Device Identifier: disk1s4
Name: Macintosh HD
Capacity: 746.3 GB (801436540928 Bytes)
[Core Storage - disk2 contains merged data]
Destination Path: /Volumes/Mills/disk2 2017-03-21 15-51-52/Mills-2017-03-21
Acquisition Start Time: 2017-03-21 15:51:53 (TZ +0:00 UTC)
Acquisition End Time: 2017-03-21 22:55:26 (TZ +0:00 UTC)
Total Imaging Time: 7 hours 3 minutes 33 seconds
Format: E01
Segmentation: No Segments
Compression: Fast Compression
Image Hashes:
md5: B6DF588680D0D57D8B1CE929B0034A12
```

Appendix C.   File System Information

Note: The red text in this appendix is highlighting the volume Creation Date which is the same as the Date the operating system was installed. This is standard information that is generally included in digital forensic reports.

FILE SYSTEM INFORMATION
_____

File System Type: HFS+
File System Version: HFS+

Volume Name: Macintosh HD
Volume Identifier: 753a14be50ec1811

Last Mounted By: Mac OS X, Journaled
Volume Unmounted Properly
Mount Count: 1764394851

Creation Date: 2015-04-09 16:49:52 (Eastern Daylight Time)
Last Written Date: 2017-03-15 15:05:23 (Eastern Daylight Time)
Last Backup Date: 0000-00-00 00:00:00 (UTC)
Last Checked Date: 2015-04-09 18:49:52 (Eastern Daylight Time)

Journal Info Block: 3721

METADATA INFORMATION
_____
Range: 2 – 32227313
Bootable Folder ID: 15801838 [/System/Library/CoreServices]
Startup App ID: 19645656 [/System/Library/CoreServices/boot.efi]
Startup Open Folder ID: 0
Mac OS 8/9 Blessed System Folder ID: 0
Mac OS X Blessed System Folder ID: 15801838 [/System/Library/CoreServices]
Number of files: 604905
Number of folders: 139082

CONTENT INFORMATION
_____
Block Range: 0 – 760363071
Allocation Block Size: 4096
Number of Free Blocks: 686860374

Appendix D.   Attached iDevices (com.apple.iPod.plist)

Note: The red text is highlighting identifying information for each of the three Apple iPhones that were connected to the iMac.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN"
"http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
        <key>Devices</key>
        <dict>
                <key>8E3E330174F337DF</key>
                <dict>
                        <key>Connected</key>
                        <date>2016-02-19T03:17:57Z</date>
                        <key>Device Class</key>
                        <string>iPhone</string>
                        <key>Family ID</key>
                        <integer>10028</integer>
                        <key>Firmware Version</key>
                        <integer>256</integer>
                        <key>Firmware Version String</key>
                        <string>8.0</string>
                        <key>ID</key>
                        <string>8E3E330174F337DF</string>
                        <key>IMEI</key>
                        <string>013981000356259</string>
                        <key>Region Info</key>
                        <string>LL/A</string>
                        <key>Serial Number</key>
                        <string>FFMN248CG07J</string>
                        <key>Updater Family ID</key>
                        <integer>10028</integer>
                        <key>Use Count</key>
                        <integer>2</integer>
                </dict>
                <key>A173DD471871942A</key>
                <dict>
                        <key>Connected</key>
                        <date>2016-02-27T16:39:48Z</date>
                        <key>Device Class</key>
                        <string>iPhone</string>
                        <key>Family ID</key>
                        <integer>10019</integer>
                        <key>Firmware Version</key>
                        <integer>256</integer>
                        <key>Firmware Version String</key>
                        <string>9.2.1</string>
                        <key>ID</key>
                        <string>A173DD471871942A</string>
                        <key>IMEI</key>
```

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```
                <string>013428002777116</string>
                <key>Region Info</key>
                <string>LL/A</string>
                <key>Serial Number</key>
                <string>DNPJTQHHDTTP</string>
                <key>Updater Family ID</key>
                <integer>10019</integer>
                <key>Use Count</key>
                <integer>244</integer>
        </dict>
        <key>EF0E3B64F2CF3129</key>
        <dict>
                <key>Build Version</key>
                <string>14C92</string>
                <key>Connected</key>
                <date>2017-03-13T07:24:01Z</date>
                <key>Device Class</key>
                <string>iPhone</string>
                <key>Family ID</key>
                <integer>10042</integer>
                <key>Firmware Version</key>
                <integer>256</integer>
                <key>Firmware Version String</key>
                <string>10.2</string>
                <key>ID</key>
                <string>EF0E3B64F2CF3129</string>
                <key>IMEI</key>
                <string>352023077374573</string>
                <key>MEID</key>
                <string>35202307737457</string>
                <key>Product Type</key>
                <string>iPhone7,2</string>
                <key>Region Info</key>
                <string>LL/A</string>
                <key>Serial Number</key>
                <string>DNTPXR1GG5MP</string>
                <key>Use Count</key>
                <integer>235</integer>
        </dict>
    </dict>
    <key>com.apple.PreferenceSync.ExcludeAllSyncKeys</key>
    <key>conn:128:Last Connect</key>
    <data>
    1OvBUQ==
    </data>
</dict>
</plist>
```

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

Appendix E.   System Log (/private/var/log/daily.out)

Note: The red text is highlighting devices that could be of interest, in particular the device with volume name "5 TB Drive." A reference to a device with a volume name of "5 TB Drive" was found in the XML metadata that was extracted from "Ex 7 Full Version (MD121303@xAE860).wav."

Partial log:

--

Mon Dec 7 02:10:01 EST 2015 (first instance of 5 TB Drive)

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 611Gi 2.2Ti   22% 160233224 600129846  21%  /
/dev/disk3s2  3.6Ti 3.3Ti 332Gi   92% 444866396  43451932  91%  /Volumes/VIDEO
/dev/disk5s1  29Gi  1.9Gi 27Gi     7%      0         0 100%  /Volumes/DR-60D
/dev/disk4s2  4.5Ti 1.7Ti 2.8Ti   38% 230022060 380403149  38%  /Volumes/5 TB Drive
--
```

Fri Oct 30 04:02:42 EDT 2015

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 256Gi 2.6Ti    9% 67128811 693234259   9%  /
/dev/disk5s2  3.6Ti 2.9Ti 750Gi   80% 389980371 98337957  80%  /Volumes/VIDEO
/dev/disk7s1  840Mi 760Mi 79Mi    91%  194636    20292  91%  /Volumes/VMware Fusion
/dev/disk6    62Gi  6.3Gi 56Gi    11%     0        0 100%  /Volumes/WINDOWS
--
```

Mon Nov 23 23:45:32 EST 2015

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 264Gi 2.6Ti   10% 69268300 691094770   9%  /
/dev/disk3s1  29Gi  2.2Gi 27Gi     8%     0        0 100%  /Volumes/DR-60D
/dev/disk4s2  3.6Ti 3.5Ti 149Gi   96% 468739446 19578882  96%  /Volumes/VIDEO
/dev/disk5s2  168Mi 154Mi 14Mi    92%  39468     3613  92%  /Volumes/Charles Proxy v3.11.2
--
```

Sun Dec 6 02:34:43 EST 2015

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 607Gi 2.2Ti   21% 159194433 601168637  21%  /
/dev/disk3s2  3.6Ti 3.5Ti 133Gi   97% 470905888 17412440  96%  /Volumes/VIDEO
/dev/disk4s1  4.5Ti 232Mi 4.5Ti    1%   256 1220874746   0%  /Volumes/My Book
--
```

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

Tue Dec 8 03:21:22 EST 2015

Disk status:

```
Filesystem    Size  Used Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 612Gi 2.2Ti   22% 160585288 599777782  21%  /
/dev/disk3s2  3.6Ti 3.3Ti 332Gi   92% 444866396 43451932  91%  /Volumes/VIDEO
/dev/disk5s1  29Gi 1.9Gi 27Gi    7%      0         0 100%  /Volumes/DR-60D
/dev/disk4s2  4.5Ti 2.0Ti 2.6Ti  44% 267236187 343189022  44%  /Volumes/5 TB Drive
/dev/disk6    62Gi 4.1Gi 58Gi    7%      0         0 100%  /Volumes/UDISK
--
```

Fri Apr 15 09:58:51 EDT 2016

Disk status:

```
Filesystem    Size  Used Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 318Gi 2.5Ti   11% 83477914 676885156  11%  /
/dev/disk3s1  29Gi 1.9Gi 27Gi    7%      0        0 100%  /Volumes/DR-60D
/dev/disk5s2  3.6Ti 3.3Ti 330Gi   92% 445057059 43261269  91%  /Volumes/VIDEO
/dev/disk7s1  49Mi 38Mi 12Mi    77%    9645     3017  76%  /Volumes/InqScribe 2.2.3.258
/dev/disk4    1.5Gi 1.5Gi 0Bi  100%      0        0 100%  /Volumes/My Disc
/dev/disk6s1  7.5Gi 1.3Gi 6.2Gi  18%      0        0 100%  /Volumes/MILLS CASE
--
```

Sat Apr 16 11:11:20 EDT 2016

Disk status:

```
Filesystem    Size  Used Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 318Gi 2.5Ti   11% 83297242 677065828  11%  /
/dev/disk3s1  29Gi 1.9Gi 27Gi    7%      0        0 100%  /Volumes/DR-60D
/dev/disk5s2  3.6Ti 3.3Ti 330Gi   92% 445057059 43261269  91%  /Volumes/VIDEO
/dev/disk7s1  49Mi 38Mi 12Mi    77%    9645     3017  76%  /Volumes/InqScribe 2.2.3.258
/dev/disk4    1.5Gi 1.5Gi 0Bi  100%      0        0 100%  /Volumes/My Disc
--
```

Wed Apr 20 03:30:50 EDT 2016

Disk status:

```
Filesystem    Size  Used Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 318Gi 2.5Ti   11% 83297047 677066023  11%  /
/dev/disk3s1  29Gi 1.9Gi 27Gi    7%      0        0 100%  /Volumes/DR-60D
/dev/disk7s1  49Mi 38Mi 12Mi    77%    9645     3017  76%  /Volumes/InqScribe 2.2.3.258
/dev/disk4s2  3.6Ti 3.3Ti 330Gi   92% 445057037 43261291  91%  /Volumes/VIDEO
--
```

Tue Jul 5 00:49:57 EDT 2016

Disk status:

```
Filesystem    Size  Used Avail Capacity  iused    ifree %iused  Mounted on
```

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

```
/dev/disk2  2.8Ti 309Gi 2.5Ti  11%  81042227 679320843  11%  /
/dev/disk3s1 29Gi 2.8Gi 26Gi  10%      0      0 100%  /Volumes/DR-60D
/dev/disk4s2 4.5Ti 2.4Ti 2.2Ti  53% 318025392 292399817  52%  /Volumes/5 TB Drive
/dev/disk5s1 932Gi 572Gi 360Gi  62% 18446744073332521561 377030055 100%
/Volumes/ROSEN HD 2
--
```

Sat Sep 3 13:04:27 EDT 2016

Disk status:

```
Filesystem   Size  Used Avail Capacity iused   ifree %iused  Mounted on
/dev/disk3   2.8Ti 323Gi 2.5Ti  12% 84865120 675497950  11%  /
/dev/disk2s1 29Gi 885Mi 28Gi   3%      0      0 100%  /Volumes/DR-60D
/dev/disk4s1 3.7Gi 1.3Gi 2.4Gi  35%      0      0 100%  /Volumes/AUDIO
/dev/disk1s3 620Mi 538Mi 82Mi  87% 137613   21077  87%  /Volumes/Recovery HD
/dev/disk5s2 8.2Mi 6.9Mi 1.4Mi  84%   1758     350  83%  /Volumes/qbox180
--
```

Thu Oct 27 21:08:08 EDT 2016

Disk status:

```
Filesystem   Size  Used Avail Capacity iused   ifree %iused  Mounted on
/dev/disk3   2.8Ti 318Gi 2.5Ti  11% 83300950 677062120  11%  /
/dev/disk2s1 29Gi 884Mi 28Gi   3%      0      0 100%  /Volumes/DR-60D
/dev/disk5s1 28Mi 8.8Mi 19Mi  32%   2252    4904  31%  /Volumes/VOX Preferences
--
```

Sun Nov 6 20:08:08 EST 2016

Disk status:

```
Filesystem   Size  Used Avail Capacity iused   ifree %iused  Mounted on
/dev/disk3   2.8Ti 348Gi 2.5Ti  12% 91285544 669077526  12%  /
/dev/disk2s1 29Gi 885Mi 28Gi   3%      0      0 100%  /Volumes/DR-60D
--
```

Thu Nov 17 20:08:21 EST 2016

Disk status:

```
Filesystem   Size  Used Avail Capacity iused   ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti  12% 90526438 669836632  12%  /
/dev/disk3s2 3.6Ti 3.3Ti 330Gi  92% 445057004 43261324  91%  /Volumes/VIDEO
/dev/disk4s1 191Mi 133Mi 57Mi  70%  34110   14714  70%  /Volumes/Skype
--
```

Mon Dec 5 13:36:10 EST 2016

Disk status:

```
Filesystem Size  Used Avail Capacity iused   ifree %iused  Mounted on
```

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

```
/dev/disk2  2.8Ti  344Gi  2.5Ti   12% 90179513 670183557  12%  /
/dev/disk3  62Gi  5.6Gi  57Gi   9%    0      0 100%  /Volumes/AUDIO
---
```

Sat Dec 24 13:32:20 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti   12% 90472778 669890292  12%  /
/dev/disk3s2 4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Sun Dec 25 12:04:12 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti   12% 90516305 669846765  12%  /
/dev/disk3s2 4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
--
```

Mon Dec 26 12:57:02 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti   12% 90552852 669810218  12%  /
/dev/disk3s2 4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
--
```

Tue Dec 27 08:09:51 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti   12% 90583429 669779641  12%  /
/dev/disk3s2 4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Wed Dec 28 11:32:20 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2   2.8Ti 345Gi 2.5Ti   12% 90594729 669768341  12%  /
/dev/disk3s2 4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Thu Dec 29 10:12:38 EST 2016

Disk status:

INVESTIGATION REPORT: MILLS VS. MARYLAND LIVE

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 345Gi 2.5Ti   12%  90607950 669755120  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Fri Dec 30 11:12:54 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 345Gi 2.5Ti   12%  90624301 669738769  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Sat Dec 31 10:04:14 EST 2016

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 345Gi 2.5Ti   12%  90623836 669739234  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
--
```

Sun Jan 1 11:35:18 EST 2017

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 346Gi 2.5Ti   12%  90669154 669693916  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
--
```

Mon Jan 2 08:09:51 EST 2017

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 345Gi 2.5Ti   12%  90447714 669915356  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Tue Jan 3 10:55:43 EST 2017

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused    ifree %iused  Mounted on
/dev/disk2    2.8Ti 346Gi 2.5Ti   12%  90733909 669629161  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027856 292397353  52%  /Volumes/5 TB Drive
---
```

Wed Jan 4 10:52:04 EST 2017

Disk status:

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```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 346Gi 2.5Ti   12%  90757370 669605700  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027858 292397351  52%  /Volumes/5 TB Drive
--
```

Thu Jan 5 08:13:01 EST 2017 (most recent instance of 5 TB Drive)

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 346Gi 2.5Ti   12%  90744036 669619034  12%  /
/dev/disk3s2  4.5Ti 2.4Ti 2.2Ti   53% 318027858 292397351  52%  /Volumes/5 TB Drive
--
```

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 346Gi 2.5Ti   12%  90766217 669596853  12%  /
/dev/disk3s0  87Mi  87Mi  0Bi    100%     0         0 100%  /Volumes/Untitled
--
```

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 339Gi 2.5Ti   12% 88843920 671519150  12%  /
/dev/disk1s3  620Mi 537Mi 83Mi    87%  137548    21142  87%  /Volumes/Recovery HD
--
```

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 339Gi 2.5Ti   12% 88831714 671531356  12%  /
/dev/disk3s1  46Mi  2.9Mi 43Mi     7%     731    11033   6%  /Volumes/Adobe Flash Player
Installer
/dev/disk4s1  11Mi  4.7Mi 6.2Mi   44%    1203     1585  43%  /Volumes/Install VUDUToGo
/dev/disk5s2  3.6Ti 3.5Ti 180Gi   96% 464697137 23621191  95%  /Volumes/VIDEO
--
```

Disk status:

```
Filesystem    Size  Used  Avail Capacity  iused     ifree %iused  Mounted on
/dev/disk2    2.8Ti 282Gi 2.6Ti   10% 73888382 686474688  10%  /
/dev/disk3s2  3.6Ti 3.5Ti 168Gi   96% 466355164 21963164  96%  /Volumes/VIDEO
```

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Appendix F.   Search Results
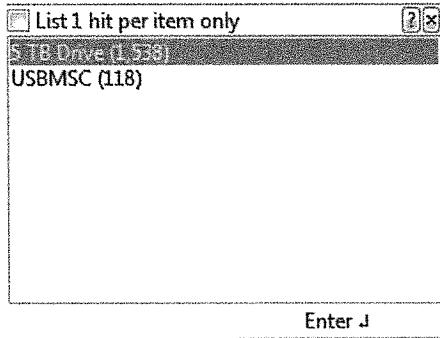
Figure 14. Search Results totals

This screenshot shows a partial search results listing for the keyword "5 TB Drive". This shows references to a device with a volume name of "5 TB Drive". This is the same reference that was identified in the xml metadata that was extracted from "Ex 7 Full Version (MD121303@xAE860).wav". This is evidence that a device with volume name "5TB Drive" being attached to computer with files relating to the case.

Figure 15. Partial Search Results listing for "5 TB Drive"

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The below screenshot is a partial listing showing four file on a device with a volume name of "5 TB Drive". The screenshot highlights four files. Of the four files, two of have a file extension of ".mp4" and are likely related to the case.

Figure 16. Partial listing for "5 TB Drive"

Evidence of "AUDIO" attached/mounted to computer with possible file of interest with files of interest. This device could contain files relevant to the case.

Figure 17. Partial listing for "AUDIO"

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Appendix G.   Video & Audio Timeline Analysis

Note: Descriptions are only being provided for the significant comparators and not all content is contained in the below matrix.

Audio Only (13:15) Ex 7 Full Version (MD121303@xAE860).wav	Video Only (17:14) Mills - Hallway (MD121347@xAE860).wmv	YouTube Video (14:45) https://www.youtube.com/watch?v=TDtkoHrIlow
	0:00-0:08 security and plaintiff enters holding area	
	0:09 security says something	
	0:12 security turns and says something to plaintiff	
	At 0:23 plaintiff pulls phone out of left pocket	
	At 0:44 plaintiff puts phone back into left pocket	
	At 1:53 plaintiff pulls phone out again and does something on it.	
	At 2:27 plaintiff puts phone back into left pocket	
	At 3:04 plaintiff says something to security	
	At 3:44 security manager leaves holding area	
	At 4:02 plaintiff says something to security	
	At 4:26 plaintiff pulls out phone again and looks at it, then put it back into his pocket	
	At 4:38 security opens door	
	At 4:40 police walks in (see footnote below)	
0:00 – 0:28 seconds very muffled (hard to understand)		0:00 – 2:15 security escorts plaintiff through casino to holding area
At 0:49 the police officer was walking in and said to the defendant "what's going on man?"		At 2:19 the police officer was walking in and said to the defendant "what's going on man?"
At 1:20 the police officer explained to plaintiff he is being accused of card counting		At 2:56 the police officer explained to plaintiff he is being accused of card counting

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At 2:29 plaintiff states he can sue over this		At 3:58 plaintiff states he can sue over this
At 3:29 NOISE: plaintiff puts left hand into left pant pocket		At 4:59 NOISE: plaintiff puts left hand into left pants pocket
At 3:40 police states they need plaintiff information in order to ban him		At 5:11 police states they need plaintiff information in order to ban him
At 3:50 police radio		At 5:22 police radio
At 4:44 plaintiff asked if casino staff can detain someone in the backroom if they haven't done anything wrong		
At 4:51 police states they (casino staff) have reasons to believe plaintiff have (done something wrong)		
At 6:52 plaintiff provides home address		
At 7:04 scratching noise (plaintiff moving leg)		
At 7:43 security manager introduces himself		
At 8:40 noise (plaintiff hands in pocket)	At 7:52 plaintiff gives police officer his passport	
At 9:16 security manager "here's your passport"		
At 9:30 plaintiff ask if they record audio		
At 10:50 police: "stop asking about Vegas"		
	Video concludes at: 17:14	Video concludes at: 14:45

Note: The Video Only video (beyond marker "4:40 police walks in") appears consistent with the YouTube video.

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Appendix H.   XML Metadata Extracted from audio file

Note: The red text is highlighting valuable information from the XML metadata that was extracted from the "Ex 7 Full Version (MD121303@xAE860).wav" audio file. This is important because it shows information about the application that was used to create or modify "Ex 7 Full Version (MD121303@xAE860).wav", a reference to a device with volume name "5 TB Drive", the type of computer that was used in the creation or modification process, and other media files that relate to the case.

```xml
<?xml version="1.0" encoding="UTF-8"?>

<BWFXML><SPEED><FILE_SAMPLE_RATE>48000</FILE_SAMPLE_RATE><AUDIO_BIT_DEPTH>16</AUDIO_
BIT_DEPTH><TIMECODE_FLAG>NDF</TIMECODE_FLAG><TIMECODE_RATE>25/1</TIMECODE_RATE><TI
MESTAMP_SAMPLES_SINCE_MIDNIGHT_LO>0</TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_LO><TIMESTA
MP_SAMPLES_SINCE_MIDNIGHT_HI>0</TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_HI></SPEED><BEXT><B
WF_ORIGINATOR>Adobe Premiere Pro CC 2015 (Maci</BWF_ORIGINATOR><BWF_ORIGINATION_DATE>2016-
11-
08</BWF_ORIGINATION_DATE><BWF_ORIGINATION_TIME>15:05:01</BWF_ORIGINATION_TIME><BWF_TI
ME_REFERENCE_LOW>0</BWF_TIME_REFERENCE_LOW><BWF_TIME_REFERENCE_HIGH>0</BWF_TIME_
REFERENCE_HIGH></BEXT></BWFXML>
_PMXT0  <?xpacket begin="ï»¿" id="W5M0MpCehiHzreSzNTczkc9d"?>

<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmptk="Adobe XMP Core 5.6-c107 79.158019, 2015/06/29-13:20:40        ">
   <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
      <rdf:Description rdf:about=""
         xmlns:xmpMM="http://ns.adobe.com/xap/1.0/mm/"
         xmlns:stEvt="http://ns.adobe.com/xap/1.0/sType/ResourceEvent#"
         xmlns:stRef="http://ns.adobe.com/xap/1.0/sType/ResourceRef#"
         xmlns:xmp="http://ns.adobe.com/xap/1.0/"
         xmlns:xmpDM="http://ns.adobe.com/xmp/1.0/DynamicMedia/"
         xmlns:creatorAtom="http://ns.adobe.com/creatorAtom/1.0/"
         xmlns:dc="http://purl.org/dc/elements/1.1/">
      <xmpMM:InstanceID>xmp.iid:65b8ddac-3490-4a01-bffd-33c93171d4b3</xmpMM:InstanceID>
      <xmpMM:DocumentID>3245103b-90f3-ff78-a224-d7540000004f</xmpMM:DocumentID>
      <xmpMM:OriginalDocumentID>xmp.did:5acd7579-793b-4ebb-8f0a-a7e3bd32784e</xmpMM:OriginalDocumentID>
      <xmpMM:History>
       <rdf:Seq>
        <rdf:li rdf:parseType="Resource">
         <stEvt:action>saved</stEvt:action>
         <stEvt:instanceID>6db542b7-c45b-98e8-70a8-1ee70000007c</stEvt:instanceID>
         <stEvt:when>2016-11-08T15:05:01-05:00</stEvt:when>
         <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
         <stEvt:changed>/</stEvt:changed>
        </rdf:li>
        <rdf:li rdf:parseType="Resource">
         <stEvt:action>created</stEvt:action>
         <stEvt:instanceID>xmp.iid:eac42e0f-79cc-4b34-afa5-d2672b439726</stEvt:instanceID>
         <stEvt:when>2016-11-08T15:04:56-05:00</stEvt:when>
         <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
        </rdf:li>
        <rdf:li rdf:parseType="Resource">
         <stEvt:action>saved</stEvt:action>
         <stEvt:instanceID>xmp.iid:d16e6fc1-c045-4cac-9a6f-2a1cd56433c6</stEvt:instanceID>
         <stEvt:when>2016-11-08T15:05:01-05:00</stEvt:when>
         <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
         <stEvt:changed>/</stEvt:changed>
        </rdf:li>
        <rdf:li rdf:parseType="Resource">
         <stEvt:action>saved</stEvt:action>
         <stEvt:instanceID>xmp.iid:65b8ddac-3490-4a01-bffd-33c93171d4b3</stEvt:instanceID>
         <stEvt:when>2016-11-08T15:05:01-05:00</stEvt:when>
         <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
         <stEvt:changed>/metadata</stEvt:changed>
```

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```
      </rdf:li>
    </rdf:Seq>
  </xmpMM:History>
  <xmpMM:Ingredients>
    <rdf:Bag>
      <rdf:li rdf:parseType="Resource">
        <stRef:instanceID>264019e4-a469-df61-45d1-c52f00000098</stRef:instanceID>
        <stRef:documentID>4ed0dede-749a-c7b1-3965-86d10000006b</stRef:documentID>
        <stRef:fromPart>time:914457600000000f254016000000d190603445760000f254016000000</stRef:fromPart>
        <stRef:toPart>time:11359595520000f254016000000d190603445760000f254016000000</stRef:toPart>
        <stRef:filePath>MD Live - False Imprisonment.mov</stRef:filePath>
        <stRef:maskMarkers>None</stRef:maskMarkers>
      </rdf:li>
      <rdf:li rdf:parseType="Resource">
        <stRef:instanceID>264019e4-a469-df61-45d1-c52f00000098</stRef:instanceID>
        <stRef:documentID>4ed0dede-749a-c7b1-3965-86d10000006b</stRef:documentID>
        <stRef:fromPart>time:915544788480000f254016000000d189516257280000f254016000000</stRef:fromPart>
        <stRef:toPart>time:12446784000000f254016000000d189516257280000f254016000000</stRef:toPart>
        <stRef:filePath>MD Live - False Imprisonment.mov</stRef:filePath>
        <stRef:maskMarkers>None</stRef:maskMarkers>
      </rdf:li>
      <rdf:li rdf:parseType="Resource">
        <stRef:instanceID>2732ff46-d6a7-e4ee-d625-fc9f000000c6</stRef:instanceID>
        <stRef:documentID>2ee826b5-876f-6cb0-56bf-c0e200000099</stRef:documentID>
        <stRef:fromPart>time:0d12446784000000f254016000000</stRef:fromPart>
        <stRef:toPart>time:0d12446784000000f254016000000</stRef:toPart>
        <stRef:filePath>Audio Full - Patron Assaulted &amp; Detained at MD Live.wav</stRef:filePath>
        <stRef:maskMarkers>None</stRef:maskMarkers>
      </rdf:li>
    </rdf:Bag>
  </xmpMM:Ingredients>
  <xmpMM:Pantry>
    <rdf:Bag>
      <rdf:li rdf:parseType="Resource">
        <xmp:CreateDate>2014-10-10T06:49:24Z</xmp:CreateDate>
        <xmp:ModifyDate>2016-11-08T14:36:44-05:00</xmp:ModifyDate>
        <xmp:MetadataDate>2016-11-08T14:36:44-05:00</xmp:MetadataDate>
        <xmpDM:duration rdf:parseType="Resource">
          <xmpDM:value>1876000</xmpDM:value>
          <xmpDM:scale>1/2500</xmpDM:scale>
        </xmpDM:duration>
        <xmpDM:startTimeScale>2500</xmpDM:startTimeScale>
        <xmpDM:startTimeSampleSize>100</xmpDM:startTimeSampleSize>
        <xmpDM:altTimecode rdf:parseType="Resource">
          <xmpDM:timeValue>01:00:00:00</xmpDM:timeValue>
          <xmpDM:timeFormat>25Timecode</xmpDM:timeFormat>
        </xmpDM:altTimecode>
        <xmpMM:InstanceID>264019e4-a469-df61-45d1-c52f00000098</xmpMM:InstanceID>
        <xmpMM:DocumentID>4ed0dede-749a-c7b1-3965-86d10000006b</xmpMM:DocumentID>
        <xmpMM:OriginalDocumentID>xmp.did:a039c59f-65b0-4440-b5e4-
2110299ff193</xmpMM:OriginalDocumentID>
        <xmpMM:History>
          <rdf:Seq>
            <rdf:li rdf:parseType="Resource">
              <stEvt:action>saved</stEvt:action>
              <stEvt:instanceID>264019e4-a469-df61-45d1-c52f00000098</stEvt:instanceID>
              <stEvt:when>2016-11-08T14:36:44-05:00</stEvt:when>
              <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
              <stEvt:changed>/</stEvt:changed>
            </rdf:li>
          </rdf:Seq>
        </xmpMM:History>
      </rdf:li>
      <rdf:li rdf:parseType="Resource">
```

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```
        <xmpMM:InstanceID>2732ff46-d6a7-e4ee-d625-fc9f000000c6</xmpMM:InstanceID>
        <xmpMM:DocumentID>2ee826b5-876f-6cb0-56bf-c0e200000099</xmpMM:DocumentID>
        <xmpMM:OriginalDocumentID>xmp.did:26fd3227-f9bb-4481-a464-
21451fcb6927</xmpMM:OriginalDocumentID>
        <xmpMM:History>
          <rdf:Seq>
            <rdf:li rdf:parseType="Resource">
              <stEvt:action>saved</stEvt:action>
              <stEvt:instanceID>2732ff46-d6a7-e4ee-d625-fc9f000000c6</stEvt:instanceID>
              <stEvt:when>2016-11-08T14:37:39-05:00</stEvt:when>
                <stEvt:softwareAgent>Adobe Premiere Pro CC 2015 (Macintosh)</stEvt:softwareAgent>
              <stEvt:changed>/</stEvt:changed>
            </rdf:li>
          </rdf:Seq>
        </xmpMM:History>
        <xmp:MetadataDate>2016-11-08T14:37:39-05:00</xmp:MetadataDate>
        <xmp:ModifyDate>2016-11-08T14:37:39-05:00</xmp:ModifyDate>
      </rdf:li>
    </rdf:Bag>
  </xmpMM:Pantry>
  <xmpMM:DerivedFrom rdf:parseType="Resource">
    <stRef:instanceID>xmp.iid:eac42e0f-79cc-4b34-afa5-d2672b439726</stRef:instanceID>
    <stRef:documentID>xmp.did:eac42e0f-79cc-4b34-afa5-d2672b439726</stRef:documentID>
    <stRef:originalDocumentID>xmp.did:eac42e0f-79cc-4b34-afa5-d2672b439726</stRef:originalDocumentID>
  </xmpMM:DerivedFrom>
  <xmp:MetadataDate>2016-11-08T15:05:01-05:00</xmp:MetadataDate>
  <xmp:ModifyDate>2016-11-08T15:05:01-05:00</xmp:ModifyDate>
  <xmp:CreatorTool>Adobe Premiere Pro CC 2015 (Macintosh)</xmp:CreatorTool>
  <xmp:CreateDate>2016-11-08T15:04:26-05:00</xmp:CreateDate>
  <creatorAtom:windowsAtom rdf:parseType="Resource">
    <creatorAtom:extension>.prproj</creatorAtom:extension>
    <creatorAtom:invocationFlags>/L</creatorAtom:invocationFlags>
  </creatorAtom:windowsAtom>
  <creatorAtom:macAtom rdf:parseType="Resource">
    <creatorAtom:applicationCode>1347449455</creatorAtom:applicationCode>
    <creatorAtom:invocationAppleEvent>1129468018</creatorAtom:invocationAppleEvent>
    <creatorAtom:posixProjectPath>/Volumes/5 TB Drive/MD Live/MD Live
Videos/Videos.prproj</creatorAtom:posixProjectPath>
  </creatorAtom:macAtom>
  <xmpDM:projectRef rdf:parseType="Resource">
    <xmpDM:type>movie</xmpDM:type>
  </xmpDM:projectRef>
  <xmpDM:audioSampleRate>48000</xmpDM:audioSampleRate>
  <xmpDM:audioSampleType>16Int</xmpDM:audioSampleType>
  <xmpDM:audioChannelType>Stereo</xmpDM:audioChannelType>
  <xmpDM:duration rdf:parseType="Resource">
    <xmpDM:value>19877</xmpDM:value>
    <xmpDM:scale>1/25</xmpDM:scale>
  </xmpDM:duration>
  <xmpDM:startTimecode rdf:parseType="Resource">
    <xmpDM:timeFormat>25Timecode</xmpDM:timeFormat>
    <xmpDM:timeValue>00:00:00:00</xmpDM:timeValue>
  </xmpDM:startTimecode>
  <xmpDM:startTimeScale>30000</xmpDM:startTimeScale>
  <xmpDM:startTimeSampleSize>1001</xmpDM:startTimeSampleSize>
  <xmpDM:altTimecode rdf:parseType="Resource">
    <xmpDM:timeValue>00:00:00:00</xmpDM:timeValue>
    <xmpDM:timeFormat>25Timecode</xmpDM:timeFormat>
  </xmpDM:altTimecode>
  <dc:format>Waveform Audio</dc:format>
</rdf:Description>
  </rdf:RDF>
</x:xmpmeta>
<?xpacket end="w"?>
```

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Appendix I.   QuickVoice® Recorder Information

Note: The highlighted areas in this screenshot shows features of the QuickVoice Recorder that are important to this case.

Figure 18. QuickVoice® Recorder

Reference: QuickVoice Recorder Information: https://itunes.apple.com/us/app/quickvoice-recorder/id284675296?mt=8)